ASSIST

Alabama Social Services Information SysTem
Center for Information Services Division
Department of Human Resources

APPENDIX K: DISASTER RECOVERY PLAN

05/31/05

Table of Contents

Version Control

VERSION CONTROL

This section of the document records the various versions or releases of this document. Each version or release must have an associated approval form as documented in Appendix H (ASSIST Disaster Recovery Plan Change Approval Form).

Version	Details/Description	Distribution	Date	Author
0.10	First Draft – • Added Version Control • Added Checklists for Recovery and Return to Production Procedures (Appendix B.4 – B.11 • Added Appendix G – Desktop Image • Added Appendix H – Plan Change Approval Form • Added Appendix I – Disaster Recovery Exercise Guide • Made change in Section 4 to refer to new checklists. • Made change in Section 2.2 to refer to Appendix I. • Modified Table of contents to add new sections	Whole Document	05/27/2003	Allyson Venable
0.20	• Added Desktop Image Requirements • Modified Organization Chart in Section 2 • Modified Appendix F.3 CA-7 Scheduling Info	Whole Document	070/3/2003	Allyson Venable
0.30	• Updated ASSIST backup information in section F.1.1, F.2.1, and F.3 with additional info from DBA's	Appendix F	07/07/2003	Allyson Venable
0.40	Update ASSIST recovery steps from DBA's	Section 4.1 and Appendix E	08/27/2003	Allyson Venable
0.50	• Added section 1.6 Issues • Added section 1.7 Recommendations for Plan Improvement. • Renumbered sections 1.6 – 1.8 to 1.8 to 1.10	Whole Document	09/15/2003	Allyson Venable
0.60	Update for Release 2 Changes	Section 5.1.1 Appendix D Appendix E Appendix F	05/31/2005	Allyson Venable

1.0 EXECUTIVE SUMMARY

1.1 OBJECTIVE

The objective of this Disaster Recovery Plan is to provide the necessary recovery resources, and a predetermined course of action for recovering the information technology resources that support the Alabama Social Services Information SysTem (ASSIST) should a disaster occur. The Disaster Recovery Journal (DRJ), a publication dedicated to Business Continuity since 1987, defines a Disaster as "A sudden, unplanned calamitous event causing great damage or loss. Any event that creates an inability on an organization's part to provide critical business functions for some predetermined period of time." This same publication defines a **Disaster Recovery Plan** as "the document that defines the resource, actions, tasks and data required to manage the business recovery process in the event of a business interruption." This plan is designed to assist in restoring the business process within a recovery time of 24 to 48 hours. DHR will adhere to all State and Federal DRP procedural testing requirements.

1.2 SCOPE

This plan addresses the restoration of the following information technology resources:

- ASSIST mainframe software and data
- Windows NT based DB2 Connect Servers
- Novell File Servers configured to support DHR sites using ASSIST
- ASSIST desktop workstations

1.3 STRATEGY

The recovery strategy for ASSIST technology resources is:

- Publish and distribute this Disaster Recovery Plan to be used as a reference for restoring the ASSIST operating environment should an interruption in computer services occur
- Maintain this plan as environmental conditions, systems design, and configuration changes are made
- In the event of a disaster, recover the ASSIST mainframe data processing and network connections using the Alabama Department of Finance/Information Services Division Secondary Data Center as an alternate processing facility or other site as designated by Finance/ISD.
- Maintain normal processing on this alternate facility until such time that normal operations can be migrated back to the primary site

1.4 ASSUMPTIONS

The procedures for the recovery of information technology components of ASSIST require the coordination of effort across multiple state agencies. This plan assumes:

- Finance/ISD will recover/provide the MVS operating system, ancillary software, and data center equipment required to support ASSIST mainframe processing at an alternate processing facility.
- Finance/ISD will restore Statewide WAN communications to the alternate processing facility from all DHR county and central office locations.
- The state office and/or county have local disaster recovery plans that will be activated to address recovery of non-technical resources (e.g., office space, phone systems, county locations) and procurement of PCs and Server hardware for each DHR site.

1.5 LIMITATIONS

This plan addresses the recovery of information technology resources supporting ASSIST that are within the scope of DHR's control. Recovery of data center computing facilities and statewide communications to county offices are not topics within the scope of this document. The recovery of those resources is the responsibility of Finance/ISD. The Alabama Department of Finance is mandated by stature to plan, control, and coordinate state data processing activities as well as developing and maintaining a master plan for the state's data processing activities. Additionally, this plan contains procedures that can be used to recover site specific DHR Information Technology Resources that are required by ASSIST. However, it does not address each DHR site's individual recovery requirements, nor does it contain manual work-around procedures for ASSIST users. Site specific recovery procedures and emergency operating procedures are documented locally for the state office and each county office.

If the downtown area suffered a major catastrophic disaster where most of the downtown area was destroyed, there is no alternate processing facility on which to house the mainframe software and data for ASSIST. At the present time, the Department of Finance/ISD has no alternate processing facility outside of the downtown area. However, they have developed and issued an RFP for disaster recovery services. The have received three responses and have conducted contract negotiations with IBM Recovery Services. Finance/ISD is planning to setup a hot-site at the Alabama Supercomputer Authority Data Center in Huntsville, Alabama. This should be complete by mid 2005. Once Finance/ISD secures an alternate-processing site, this plan will change to reflect these changes.

In the event of a disaster, ASSIST would be competing with other systems and other agencies in their recovery processes. Resources would become very limited. A recovery time of 24 to 48 hours is realistic if ASSIST is the only system being restored. However, the reality of competing resources depending on the nature of the

disaster could place recovery time from days to weeks. Finance/ISD is developing a prioritization schedule for customer agencies.

1.6 ISSUES

- Server backups are not store off-site
- Server backups are limited to daily backups for 5 days
- Mainframe backups are not stored off-site away from the downtown area

1.7 RECOMMENDATIONS FOR PLAN IMPROVEMENTS

Based on the assumptions and limitations stated in the previous sections the following recommendations are strongly suggested:

- Server backups be stored off-site away from the downtown area
- Mainframe backups need to be store off-site away from the downtown area

1.8 COMMAND CENTER INFORMATION

In the event of a disaster, one of the two locations listed will serve as the command center for coordinating recovery operations. The ASSIST Technical Recovery Team Coordinator will make the decision regarding which site to use. Selection of the command center location is a management decision based on the severity of the disaster.

Alabama Department of Human Resources Gordon Persons Building 50 North Ripley Street Montgomery, Alabama 36130	
Commissioner's Office	(334) 242-1160
Office of Governmental Affairs and Public Information	(334) 242-1850
Family Services Partnership	(334) 242-9500

Alabama Emergency Management Agency 5898 County Road 41 Clanton, Alabama 35046	
Directors Office	(205) 280-2201
Public information	(205) 280-2247
Operations	(205) 280-2212

1.9 ALTERNATE PROCESSING FACILITIES

The State maintains an alternate processing facility for mainframe computer operations at the Finance/ISD Secondary Data Center located in the State House Building.

Finance/ISD Secondary Data Center 11 South Union Street 1st Floor Montgomery, Alabama 36130	
Chief Information Officer	(334) 242-3840
Finance/ISD Operations	(334) 242-3538

DHR does not maintain office space dedicated to computer systems recovery. Each DHR County has documented disaster recovery plans, which addresses site specific recovery for each of the 67 county locations and central offices. In the event of a disaster that damages or destroys DHR offices, sites that have not sustained any damage will serve as temporary locations for the damaged site(s).

1.10 OFF-SITE STORAGE FACILITIES

Recovery resources are maintained at the locations listed below. Section 6 of this plan contains the specific details of each physical location, including contact names, telephone numbers, and the storage facility contents.

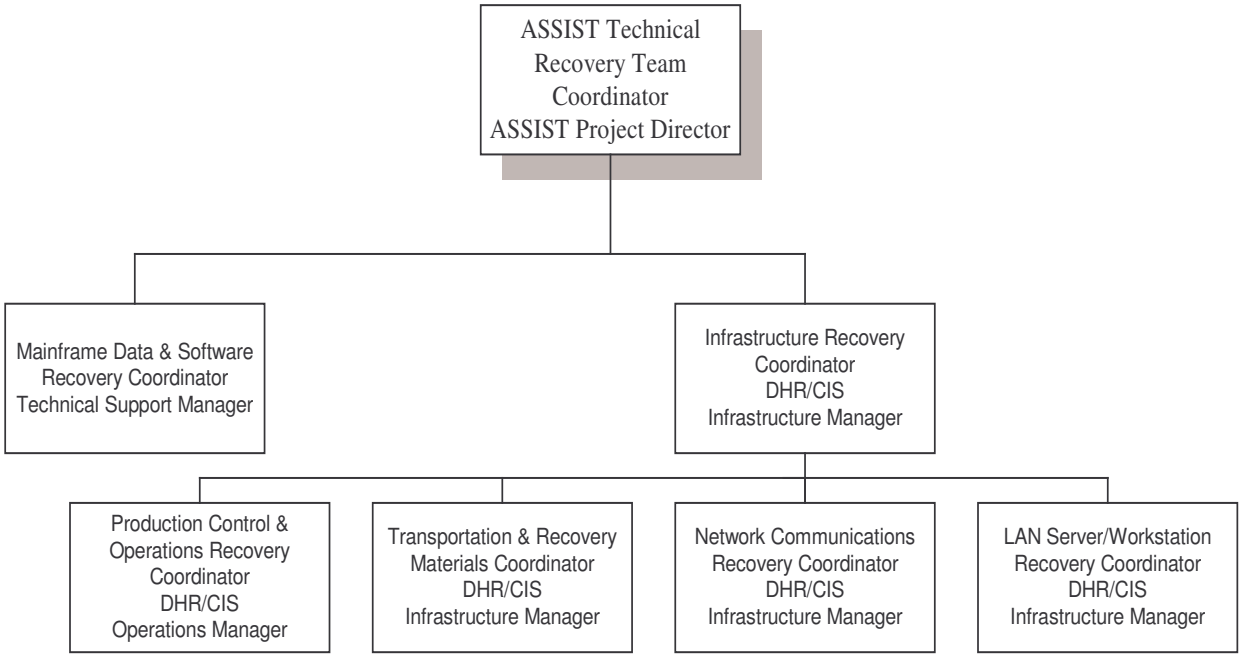
Department of Finance State House Building 11 South Union Street Montgomery, Alabama 36130	
Chief Information Officer	(334) 242-3840
Finance/ISD Operations	(334) 242-3538

Department of Human Resources Center for Information Services Folsom Administrative Building 64 North Union St. Montgomery, Alabama 36130	
DHR/CIS Deputy Director for Infrastructure	(334) 242-3682
DHR/CIS Infrastructure Manager	(334) 242-3203

2.0 ASSIST TECHNICAL RECOVERY TEAM ORGANIZATION

This section of the plan describes the organizational structure and responsibilities of the ASSIST Technical Recovery Team.

In the event of a disaster, the ASSIST Technical Recovery Team's responsibility is to restore ASSIST data processing and ensure ASSIST information processing continuity. For the duration of the disaster, team members' primary duties are as listed herein. Note that these responsibilities may be redirected as mandated by the ASSIST Technical Recovery Team Coordinator. Additionally, members of the Technical Recovery Team are expected to continue performing their normal duties in a diminished capacity until such time that data processing has been restored to the primary processing site.



As part of the maintenance of this document, DHR should provide the names and contact information for individuals identified by title. This information should be verified and updated as necessary to keep this information current. The ASSIST Technical Recovery Team Coordinator has responsibility for maintaining this information.

2.1 ASSIST TECHNICAL RECOVERY TEAM

This information should be verified and updated by the ASSIST Technical Recovery Team Coordinator on a quarterly basis to assure it's continuing accuracy.

Role	Name	Contact Numbers	Work Hours In/Out
ASSIST Technical Recovery Team Coordinator		Office: 334-353-1282	7:00 am/3:30 pm
	Assist Project Director	Cell: 334-303-3063	
		Pager: 334-571-1282	
Alternate		Office:	
		Cell:	
		Pager:	
Mainframe Data & Software Recovery Coordinator		Office: 334-242-3313	7:30 am/4:00 pm
	Tech Support Manager	Cell: 334-467-6081	
		Pager:	
Alternate		Office: 334-242-3763	8:00 am/4:30 pm
	Tech Support Supervisor	Cell:	
		Pager: 334-571-1292	
Infrastructure Recovery Coordinator		Office: 334-242-3682	
	Infrastructure Manager	Cell:	
		Pager:	
Alternate		Office: 334- 242-3202	
	Infrastructure Supervisor	Cell:	
		Pager:	
Transportation & Recovery Materials Coordinator		Office: 334-242-3682	
	Infrastructure Manager	Cell:	
		Pager:	
Alternate		Office: 334-242-3202	
	Infrastructure Supervisor	Cell:	
		Pager:	
Production Control & Operations Recovery Coordinator		Office: 334-242-3430	
	Operations Manager	Cell:	
		Pager:	
Alternate	Infrastructure Manager	Office: 334-242-3682	
		Cell:	
		Pager:	
Network Communications Recovery Coordinator		Office: 334-242-3682	
	Infrastructure Manager	Cell:	
		Pager:	
Alternate		Office: 334-242-3202	
	Infrastructure Supervisor	Cell:	
		Pager:	
LAN/WAN Server & Workstation Recovery Coordinator		Office: 334-242-3682	
	Infrastructure Manager	Cell:	
		Pager:	
Alternate		Office: 334-242-3202	
	Infrastructure Supervisor	Cell:	
		Pager:	

2.2 ASSIST TECHNICAL RECOVERY TEAM COORDINATOR

The ASSIST Technical Recovery Team Coordinator directs the line functions of the plan and has the following responsibilities:

- Develop and implement a disaster recovery training program
- Develop and implement a comprehensive recovery exercise schedule
- Maintain the ASSIST Disaster Recovery Plan
- Coordinate periodic ASSIST Disaster Recovery Plan exercises. See Appendix I (ASSIST Disaster Recovery Exercise Guide) for documented disaster recovery exercise guide.
- Ensure that ASSIST recovery resources are stored at the designated off-site storage facility in accordance with policies
- In the event of a disaster, direct the activities of technical recovery support personnel, materials and equipment through the following coordinators:
  a) Mainframe Data and Software Recovery Coordinator
  b) Infrastructure Recovery Coordinator
- Monitor ASSIST recovery functions and ensure the accuracy and quality of information technology systems being restored
- Review ASSIST recovery schedules to ensure application recovery is completed within the established recovery objectives
- Coordinate restoration of services to the primary site
- Communicate the status of recovery operations to the Director of CISP and/or the DHR Local Administration Team

The ASSIST Technical Recovery Team Coordinator has no other management responsibilities until computer operations have been restored and are functioning at the alternate site.

2.3 MAINFRAME DATA AND SOFTWARE RECOVERY COORDINATOR

The Mainframe Data and Software Recovery Coordinator is accountable for the restoration of ASSIST mainframe computer operations to normal, or as close to normal, as possible at the alternate processing facility. The Mainframe Data and Software Recovery Coordinator will report to the ASSIST Technical Recovery Team Coordinator and has the following responsibilities:

- In the event of a disaster, direct activities of transportation, recovery materials, and operations through the following coordinators:
  a) Transportation and Recovery Materials Coordinator
  b) Production Control & Operations Recovery Coordinator
- Communicate with data center technical support staff to establish availability of the alternate processing facility
- Transfer of all necessary materials from off-site storage locations to the recovery site

- Restore, install, and test the required ASSIST software and data on the recovery system
- Restore production control and normal daily computer operations of ASSIST
- Perform the required restoration tasks in accordance with direction from the ASSIST Technical Recovery Team Coordinator for recovery of services at the primary site
- Communicate the status of recovery to the ASSIST Technical Recovery Team Coordinator

2.4 INFRASTRUCTURE RECOVERY COORDINATOR

The Infrastructure Recovery Coordinator is accountable for the restoration of Network Communications, LAN/WAN Server(s), and workstation(s). The Infrastructure Recovery Coordinator will report to the ASSIST Technical Recovery Team Coordinator and has the following responsibilities:

- In the event of a disaster, direct activities of network communications, servers and workstation recovery through the following coordinators:
  a) Network Communications Recovery Coordinator
  b) LAN/WAN Server and Workstation Recovery Coordinator
- Coordinate communication with data center technical support staff and telecommunications teams to establish network connectivity to the alternate processing facility from all DHR county sites affected by the disaster
- Coordinate restoration and configuration of DB2 Connect Server(s)
- Coordinate restoration and configuration of servers
- Coordinate restoration and configuration of workstations
- Communicate the status of recovery to the ASSIST Technical Recovery Team Coordinator
- Perform the required restoration tasks in accordance with direction from the ASSIST Technical Recovery Team Coordinator for recovery of services at the primary site

2.5 TRANSPORTATION AND RECOVERY MATERIALS COORDINATOR

The Transportation and Recovery Materials Coordinator is accountable for the inventory and transportation of recovery resources to the alternate processing facility as needed to restore data processing. The Transportation and Recovery Materials Coordinator will report to the Mainframe Data and Software Recovery Coordinator and Infrastructure Recovery Coordinator for the duration of the disaster.

The responsibilities of the Transportation and Recovery Materials Coordinator include the following:

- Transport recovery material from the off-site storage locations to the alternate site in accordance with the requirements of the alternate site
- Transport material and personnel to the alternate site in accordance with recovery procedures as required
- Maintain current directions to and from the off-site storage location and the alternate processing site
- Transport materials and personnel to the primary site
- Perform periodic inventory inspections of the off-site storage locations to validate materials in storage are compliant with the inventory lists
- Organize the transported material (e.g., backup carts, reports, manuals, documentation) at the alternate site

- Ensure that backup carts are transported to and from the off-site storage vaults in accordance with the backup cart rotation schedules for the duration of the disaster
- Perform required restoration tasks relative to recovery material in accordance with direction from the Mainframe Data and Software Recovery Coordinator when the contingency requirement no longer exists
- Communicate status of recovery to the Mainframe Data and Software Recovery Coordinator and Infrastructure Recovery Coordinator

2.6 PRODUCTION CONTROL AND OPERATIONS RECOVERY COORDINATOR

The Production Control and Operations Recovery Coordinator is accountable for restoration of ASSIST Operations and Production Control at the alternate processing facility. The Production Control and Operations Recovery Coordinator will report to the Mainframe Data & Software Recovery Coordinator and Infrastructure Recovery Coordinator for the duration of the disaster.

The responsibilities of the Production Control and Operations Recovery Coordinator include the following:

- Communicate ASSIST availability and status to the end user and site specific coordinators
- Support ASSIST processing requirements at the alternate site on a seven day, 24 hours basis
- Supervise computer operators and production control personnel
- Ensure ASSIST is compatible with the systems software at the primary site in accordance with the requirements of the Mainframe Data & Software Recovery Coordinator during restoration of services to the primary site
- Communicate status of recovery to Mainframe Data and Software Recovery Coordinator and Infrastructure Recovery Coordinator

2.7 NETWORK COMMUNICATIONS RECOVERY COORDINATOR

The Network Communications Recovery Coordinator is accountable for the restoration of communications between the ASSIST Client workstations, LAN Servers and the mainframe at the alternate processing facility. The Network Communications Recovery Coordinator will report to the Infrastructure Recovery Coordinator for the duration of the disaster.

The responsibilities of the Network Communications Recovery Coordinator include the following:

- Communicate with data center technical support staff and telecommunications teams to establish network connectivity to the alternate processing facility from all DHR county sites affected by the disaster

- Install Windows NT DB2 Connect server hardware according to specifications in Appendix A.4 (DB2 Connect Server Specifications)
- Restore and/or configure DB2 Connect Server(s) to operational status
- Work with data center technical support to reestablish network communications from the primary processing site to all effected DHR county sites
- Verify the final communications configuration functionality during contingency operations and restoration of service to the primary site
- Communicate status of recovery to the Infrastructure Recovery Coordinator

2.8 LAN/WAN SERVER AND WORKSTATION RECOVERY COORDINATOR

The LAN Server/Workstation Recovery Coordinator is accountable for the restoration of the ASSIST Client software and functionality. The LAN Server/Workstation Recovery Coordinator will report to the Infrastructure Recovery Coordinator for the duration of the disaster.

The responsibilities of the LAN Server/Workstation Recovery Coordinator include the following:

- Restore and/or configure the ASSIST Novell file servers
- Install and configure desktop workstation hardware according to specifications in Appendix A.1 (Client Workstation Specifications) and Appendix A.2 (Developer Workstation Specifications) at the alternate site
- Install the ASSIST software on both Novell file servers and desktop workstations
- Provide end user technical support for LAN Servers and desktop workstations
- Communicate recovery status to the Infrastructure Recovery Coordinator

3.0 DISASTER DECLARATION

When a disaster strikes, damage must be assessed immediately to ensure that the proper course of action is taken. An emergency may range in severity from a power outage to an entire building being destroyed. It is necessary to have clear guidelines to determine the appropriate response based on the severity of the situation.

This section of the plan identifies the personnel authorized to declare a disaster, sets forth the criteria for disaster declaration, and provides an outline for making the decision to declare a disaster.

3.1 DISASTER DECLARATION AUTHORITY

The following list of individuals is authorized to declare a disaster and invoke the recovery response procedures put forth by this document. The individuals with this authority are listed in order of the chain of command. In the unfortunate event that any one of these individuals has been incapacitated, the next level will assume that person's authority for the declaration of a disaster.

1) DHR Commissioner or their agent
2) DHR County Director or their agent
3) DHR Family Services Division Director or their agent and/or DHR Adult Services Division Director or their agent and/or DHR Center for Information Services Division Director or their agent
4) ASSIST Technical Recovery Team Coordinator or their agent

3.2 DAMAGE ASSESSMENT GUIDELINES

The ASSIST Technical Recovery Team Coordinator or alternate should use the following forms to assess the damage and the severity of the situation.

- Damage Assessment Checklist form (see Appendix B.1)
- Preliminary Assessment Checklist form (see Appendix B.2)

3.3 DISASTER DECLARATION CRITERIA

Upon completion of the damage assessment, if the estimated downtime is expected to exceed 48 hours, then a disaster should be declared and this plan activated.

3.4 DISASTER RECOVERY PLAN ACTIVATION

Once the decision has been made to declare a disaster and activate this plan, the ASSIST Technical Recovery Team Coordinator must then complete the Disaster Recovery Plan Activation Checklist as defined in Appendix B.3 in order to initiate recovery team response procedures contained in Section 4 of this plan.

4.0 RECOVERY TEAM RESPONSE PROCEDURES

This section of the plan documents the procedures for each of the ASSIST Technical Recovery Team Coordinators or their alternate to follow after a disaster has been declared. These procedures address each coordinator's area of responsibility, and are designed to provide step by step instructions for resource recovery response.

4.1 MAINFRAME DATA AND SOFTWARE RECOVERY PROCEDURES

Use recovery checklist documented in Appendix B.4 (Mainframe Data & Software Recovery Procedures Checklist). For return to production, use checklist documented in Appendix B.8 (Mainframe Data & Software Return to Production Procedures Checklist).

1) Establish contact with Data Center Technical Support to ascertain the following:
   - Is the MVS Operating System (TSO/ROSCOE) available for use?
   - Is the DB2 Subsystem with catalog restored (DSNx) available for use?
   - Is DB2 Connect available for use?
   - Is SMS (System Managed Storage available for use? Are the 3490E tape drives available for DHR use?
   - Is RACF available for use?
   - Is COBOL for MVS available for use?
   - EOS-MVS (Enterprise Output Solution Report Distribution) System available for use?
   - Is CA-7/CA-11 available for use?
2) Contact the Transportation and Recovery Materials Coordinator to ensure that off-site data backups and documentation are available for use at the alternate processing facility.
3) Identify the required backup (latest version)
4) Restore ASSIST MVS Data using the most current available DFDSS backups as described in Section 5 and Appendix E (Disaster Recovery Jobs) of this plan:
   - Restore the ASSIST JCL, VSAM (non-database) Program, and Sequential files (Both Object and Cobol source should be restored).
   - Restore and start the ASSIST DB2 table spaces. Follow the steps listed below in order.
   1) Log on to TSO using the production procedure.
   2) Proceed to =9;8;1 (DB2I/SPUFI)
   3) Access the PDS PS.DB2.PROD.RCVRR2P1.ASMEMLIB
   4) Run the member CRDBA2PR – this will create the Assist Production database
   5) Run the member CRSGA2PR – this will create the Assist Production stogroup
   6) Run the member CRSGA2LP – this will create the Assist Production LOB stogroup
   7) Run the member GRANTDBA – this will grant the DBA's authority on the database and stogroups
   8) Run the member GRANTCA7 – this will grant authority to CA& users

9) Run the member SBASE – this will create all the tablespaces
10) Run the member TBASE – this will create all the tables
11) Run the member IBASEA – this will create the 1st group of indexes
12) Run the member IBASEB – this will create the 2nd group of indexes
13) Run the member ABASEA – this will create the PSALA2PR aliases
14) Run the member ABASEB – this will create the PSTBASPR aliases
15) Run the member ABASEC – this will create the PSALBRPR aliases
16) Run the member GBASEA – this will grant authority on tables to PSALA2PR & individual id's
17) Run the member GBASEB – this will grant authority on tables to PSALBRPR
18) Run the member VBASE – this will create all the views, grant their authorities and aliases
19) Run the member PLANTBL – this will create the PLAN_TABLE for explains
20) Run the member SYSCOPY – this will give you a list of the DASD files and the generation number associated with the last full imagecopy for each of the ASSIST production tablespaces. "Keep this info to be used in step 24"
21) Proceed to =2 (Edit Entry Panel)
22) Access the PDS PS.DB2.PROD.RCVRR2P1.ASMEMLIB
23) Run the member DCLBASE – this will create the DCLGENS in batch mode
24) Select the member RCVRA2PR; type SUB on the command line. (This is the recover utility job for all the Assist Production Tablespaces related to both Reference and Non-reference tables.
25) Select the member RBLDA2PR; type SUB on the command line. (This is the rebuild utility job for all the Assist Production indexes related to both Reference and Non-reference tables.
26) Proceed to =9;8;1 (DB2I/SPUFI)
27) Access the PDS PS.DB2.PROD.RCVRR2P1.ASMEMLIB
28) Run the member FBASE – this will create the Assist Production foreign keys for the associated tables. This is performed after the recover so that RI will not interfere.
29) Proceed to =2 (Edit Entry Panel)
30) Access the PDS PS.DB2.PROD.RCVRR2P1.ASMEMLIB
31) Run the member REPAIR – this will repair all the tablespaces after adding FKEYS

6) Contact the Network Communications Recovery Coordinator and verify connectivity to the database.
7) Recompile programs if LOADLIB members restored from backup are not sufficient. See Appendix D for list of required mainframe batch programs.
8) If last backup was before nightly processing, then repeat nightly processing jobs. If last backup was after nightly processing, then repeat on-line activity, if necessary.
9) ASSIST regular processing is performed normally through the CA-7 scheduler. All JCL to run the processing cycles is available in PS.CA7.JCLLIB. If CA-7 is

unavailable then manual submission is required. See Appendix F for nightly processing flow diagrams, job descriptions, and CA-7 job scheduling specifications.

10) Communicate availability and status of data recovery to the ASSIST Technical Recovery Team Coordinator.

4.2 LAN/WAN SERVER AND WORKSTATION RECOVERY

4.2.1 NOVELL FILE SERVER RECOVERY PROCEDURES

Use recovery checklist documented in Appendix B.5 (Novell File Server Recovery Procedures Checklist). For return to production, use checklist documented in Appendix B.9 (Novell File server Return to Production Procedures Checklist).

1) Establish contact with the DHR Equipment Team
2) Acquire file server equipment according to ASSIST hardware specifications as documented in Appendix A.3 (Novell File Server Specifications).
3) Complete the physical configuration for file server machines and LAN/WAN
4) Install NetWare Operating system using installation materials available. Ensure that NetWare licenses are unique to the server being restored, as duplicate licenses can cause unpredictable results.
5) Install Backup Exec software using installation materials available.
6) Ensure that the ASSIST Client software has been successfully restored and/or installed on the file server.
7) Restore all server data from the most current available backups.
8) Verify that the ASSIST Client software distribution program and/or process are operational. (This step must be completed to ensure successful ASSIST desktop workstation recovery.)
9) Communicate availability and status of Server recovery to the ASSIST Technical Recovery Team Coordinator.

4.2.2 ASSIST DESKTOP WORKSTATION RECOVERY PROCEDURES

Use recovery checklist documented in Appendix B.6 (ASSIST Desktop Workstation Recovery Procedures Checklist). For return to production, use checklist documented in Appendix B.10 (ASSIST Desktop Workstation Return to Production Procedures Checklist).

1) Establish contact with the DHR Equipment Team
2) Acquire desktop workstation equipment according to ASSIST hardware specifications as documented in Appendix A.1 (Client Workstation Specifications) and Appendix A.2 (Developer Workstation Specifications)
3) Complete the physical configuration of desktop workstations being restored
4) Install workstation Operating System
5) Complete the software configuration of desktop workstations being restored as documented in Appendix G (ASSIST Desktop Images)

6) Establish workstation communication to mainframe
7) Verify that the ASSIST software distribution process is functional and that the ASSIST client software gets installed during initial server sign-on
8) Communicate availability and status of workstation recovery to the ASSIST Technical Recovery Team Coordinator

4.3 NETWORK COMMUNICATIONS RECOVERY PROCEDURES

Use recovery checklist documented in Appendix B.7 (Network Communications Recovery Procedures Checklist). For return to production, use checklist documented in Appendix B.11 (Network Communications Return to Production Procedures Checklist).

1) Establish contact with the DHR Equipment Team
2) Acquire DB2 Connect servers according to specifications in Appendix A.4 (DB2 Connect Server Specifications)
3) Physical configuration for Windows NT DB2 Connect servers.
4) Install DB2 Connect Software and configure for ASSIST connectivity.
5) Verify connectivity from the desktop via 3270 emulation software Attachmate EXTRA! For NetWare version 6.5.
6) Verify connectivity from DB2 Connect to the alternate-processing site.
7) Verify connectivity between the ASSIST workstations and the DB2 Connect servers.
8) Contact the Mainframe Software and Data Recovery Coordinator and establish connectivity to the database.
9) Communicate availability and status of network communications recovery to the ASSIST Technical Recovery Team Coordinator.

5.0 DISASTER RECOVERY BACKUPS

5.1 TABLE OF ASSIST DISASTER RECOVERY BACKUPS

5.1.1 CURRENT ASSIST MAINFRAME DISASTER RECOVERY BACKUPS

Job Name	Backup Type	Schedule	Filename and Tape #'s	Off-Site Storage Location
PSDSJA01	IBM imagecopy to disk	Daily Monday – Friday 2:30 am	PS.A2.PROD.DB2COPY.PSTP????.OFF SITE(+1)	State House Bldg. Silo
???? – Tablespace acronym. Example: Investigation = INVS.				

5.1.2 CURRENT LAN/WAN SERVER DISASTER RECOVERY BACKUPS

Job Name	Backup Type	Schedule	Filename and Tape #'s	Off-Site Storage Location
Daily Backup	Backup Exec Full dump	Daily MON – FRI	Backup EXEC controlled	Folsom Administrative Building (Monthly rotation)

6.0 BACKUP STORAGE LOCATIONS

This section of the plan identifies the disaster recovery backup schedules and off-site storage locations for ASSIST. Additionally the physical location, contact telephone numbers, and inventory of the areas used for off-site storage of ASSIST recovery resources are documented.

6.1 MAINFRAME BACKUP STORAGE

6.1.1 OFF-SITE STATE HOUSE BUILDING CONTENTS

Department of Finance State House Building 11 South Union St. 1st Floor Montgomery, Alabama 36130	
Chief Information Officer	(334) 242-3840
Finance/ISD Operations	(334) 242-3538

The recovery resources maintained at this off-site storage location should include:

1) DHR CIS Computer operations documentation and procedures manuals
2) ASSIST Operational Documentation (e.g., batch schedules, runbooks)
3) DHR's local disaster recovery plan
4) The ASSIST Disaster Recovery Plan
5) DHR mainframe backup
6) Disaster recovery tape inventory reports, backup software manuals, installation materials, IBM and/or OEM vendor documentation.
7) Other items considered necessary by individual DHR Program Areas to support their disaster recovery procedures

6.1.2 ON-SITE FOLSOM BUILDING CONTENTS

Department of Human Resources Center for Information Services Folsom Administrative Building 64 North Union St. Montgomery Alabama 36130	
Infrastructure Manager	(334) 242-3682
Tech Support Manager	(334) 242-3313

The recovery resources maintained at this on-site storage location should include:

8) DHR CIS Computer operations documentation and procedures manuals
9) ASSIST Operational Documentation (e.g., batch schedules, runbooks)
10) DHR's local disaster recovery plan
11) The ASSIST Disaster Recovery Plan
12) DHR mainframe backup
13) Disaster recovery tape inventory reports, backup software manuals, installation materials, IBM and/or OEM vendor documentation.
14) Other items considered necessary by individual DHR Program Areas to support their disaster recovery procedures

6.2 LAN/WAN SERVER BACKUP STORAGE

The two LAN Server backup data storage facilities for disaster recovery have identical inventories. Each location serves as an off-site repository for the other.

6.2.1 OFF-SITE HOPPER STREET CONTENTS

Department of Human Resources Center for Information Services Hopper Street Montgomery, Alabama 36130
Network Support Supervisor (334) 240-8863

The recovery resources maintained at this off-site storage location should include:

1) DHR CIS LAN Server Administrator Policies and Procedures Manual
2) The ASSIST Disaster Recovery Plan
3) DHR LAN Server backup tapes of servers located in the Folsom Administrative Building and Person's Building
4) Backup Exec software installation materials (e.g., product manuals, and installation instructions)
5) Network Operating System software installation CDs, licenses, and documentation

6.2.2 ON-SITE FOLSOM BUILDING CONTENTS

Department of Human Resources Center for Information Services Folsom Administrative Building 64 North Union St. Montgomery Alabama 36130

Infrastructure Manager	(334) 242-3682

The recovery resources maintained at this off-site storage location should include:

1) DHR CIS LAN Server Administrator Policies and Procedures Manual
2) The ASSIST Disaster Recovery Plan
3) DHR LAN Server backup tapes of servers located in the Gordon Persons Building
4) Backup Exec software installation materials (e.g., product manuals, and installation instructions)
5) Network Operating System software installation CDs, licenses, and documentation

7.0 RESTORATION OF SERVICES AT PRIMARY SITE

This section of the plan identifies the procedures required to restore ASSIST data processing to the primary processing facility.

The activities performed when returning to the primary site are similar to the activities performed when moving the data processing from the primary site to the alternate site. The first step in returning to the primary site is to gather the interested parties for a restoration of services meeting. This meeting should be the forum for determining the specific actions that need to be taken and the assignment of responsibilities. The sample meeting agenda is included in this document in Appendix C.

NOTE: It is possible that when service is restored, the primary site may be at a different location than the original primary processing site. In such an instance, restoration planning must also consider specifics related to the new (primary) site.

7.1 RETURN TO PRODUCTION FACILITY PROCEDURES

Once the schedules have been finalized for the move to the primary site, use the following procedures to initiate recovery at the primary site.

The following is assumed before these procedures are initiated:

- The mainframe at the primary facility has been recovered
- Network Communications to the primary facility from DHR county and central offices have been established

Refer to Section 4 of this plan (Recovery Team Response Procedures) and perform the tasks to restore ASSIST software and data to the primary processing site.

- 4.1 Mainframe Data and Software Recovery Procedures
- 4.2.1 Novell File Server Recovery Procedures
- 4.2.2 ASSIST Desktop Workstation Recovery Procedures
- 4.3 Network Communications Recovery Procedures

7.2 POST-CONTINGENCY ASSESSMENT REPORT AND EVALUATION

A post-contingency status report must be prepared by the ASSIST Technical Recovery Team Coordinator and presented to the Local Administration Team after normal processing has resumed. Following their independent review, the Local Administration Team staff should meet with the ASSIST Technical Recovery Team Coordinator to evaluate the report's findings.

It is important to stress information concerning sections of this plan that need revision. While not an exception report, areas requiring change should receive the most attention.

The report should include these topics:

1) Adequacy of the Disaster Recovery Plan.
   - All subjects of the plan must be covered.
   - Was recovery realized within the specified time?
   - Were the plan content and the ease of use adequate?
2) Efficiency of the Technical Recovery Team.
3) An analysis of team performance as a group and by individual members. Efficiency in performance and adequacy of results are the key ingredients in the analysis.
4) Effectiveness of the alternate site and recovery resources.
5) Included in this analysis must be the following questions:
   - Was the alternate site accessible?
   - Did the alternate site provide adequate computing resources for normal processing?
   - Was there any contention for equipment?
   - Was the operating environment stable?
   - Was adequate technical support provided?
6) Compliance with service level agreements by all parties. The key questions to address are the following:
   - Did agreements result in required services being provided in accordance with agreed to rates and conditions?
   - Were any non-contracted or not-agreed-to services required?
7) Effect of the disaster on system development or application modification projects.
8) List all systems in development or major revision that were affected by the disaster. Itemize any scheduling or deadline changes now required and describe the reasons for the changes.
9) Recommended changes to the Disaster Recovery Plan.
10) Describe in detail recommended changes to the plan and their expected benefit to the Department.

APPENDICES

APPENDIX A – ASSIST HARDWARE SPECIFICATIONS

This appendix identifies hardware components and software specific to the requirements for ASSIST as of May 01, 2003. It should be used as a guide for the replacement of equipment in the field where deemed appropriate. For the hardware components, the document is not intended to provide specific guidance in purchasing decisions, but rather to offer general guidance on the types of hardware that can be used. The computing market place is constantly changing and DHR may substitute as needed to respond to the marketplace. Mainframe specifications our not addressed here as the mainframe is the responsibility of the Department of Finance and is beyond our control.

A.1 – MINIMUM CLIENT WORKSTATION SPECIFICATIONS

Component	Specification
Memory	64 Mb
CPU	Pentium 166MHz
Video RAM	2Mb
Disk Space	2.5Gb
OS	Windows/95
Ethernet NIC	Duplex 10/100Mb
Communication Protocols	TCP/IP, IPX
IPX Support	Novell Client 32
Database Communication Support	Client Application Enabler/ODBC
Mail	MS Mail
Scheduling	
Word Processor	Word 97

A.2 – MINIMUM DEVELOPER WORKSTATION SPECIFICATIONS

Component	Specification
Memory	1 Gb
CPU	2 GHz Pentium IV or latest
Video RAM	64 Mb
Disk Space	40 Gb
CD-RW	24x
Monitor	19”
OS	Windows NT
Ethernet NIC	Duplex 10/100Mb
Communication Protocols	TCP/IP, IPX
IPX Support	Novell Client 32
Database Communication Support	Client Application Enabler/ODBC
Mail	MS Mail
Scheduling	
Word Processor	Word 97

A.3 – NOVELL FILE SERVER SPECIFICATIONS

The requirements listed here represent the required components to support the ASSIST application. They do not represent the complete needs for file server capability to support other DHR LAN based applications and/or file storage. The specific disk space requirements for each facility will vary.

In addition to the IPX NetWare protocol, the ASSIST application utilizes the IP gateway feature from Novell. This feature provides the capability to access documents located on other file servers across the Wide Area Network. If this feature is not available, the ASSIST application software will require a change to support FTP. This is necessary to meet the requirement that TCP/IP, SNA and Netbios are the only protocols supported on the Wide Area Network.

Component	Specification
Memory	64Mb
CPU	Pentium 166MHz
Disk Space	1 to 5Gb depending on Office
OS	Novell 4.11
Communication Protocols	TCP/IP via gateway; IPX
Ethernet NIC	Duplex 10/100Mb

A.4 – DB2 CONNECT SERVER SPECIFICATIONS

The requirements listed here represent the required components to support the ASSIST application. They do not attempt to represent the complete needs for file server capability to support other DHR LAN based applications and/or file storage. The specific disk space requirements for each facility will vary.

Component	Specifications
Memory	64Mb
CPU	Pentium 166MHz
OS	Windows/NT 4.0
Disk Space	.5Gb
Communication Protocols	SNA; TCP/IP
Ethernet NIC	Duplex 10/100Mb
SNA Software	Microsoft SNA Server
IP Software	Windows/NT

The configuration listed here will support up to 100 concurrent users. The total number of these devices required to support the entire ASSIST community would vary depending on the extent of damage to the existing DB2 Connect server base.

APPENDIX B – CHECKLISTS

The following checklists are included in this document:

B.1 – Damage Assessment Checklist
B.2 – Preliminary Assessment Checklist
B.3 – Disaster Recovery Plan Activation Checklist
B.4 – Mainframe Data & Software Recovery Procedures Checklist
B.5 – Novell File Server Recovery Procedures Checklist
B.6 – ASSIST Desktop Workstation Recovery Procedures Checklist
B.7 – Network Communications Recovery Procedures Checklist
B.8 – Mainframe Data & Software Return to Production Procedures Checklist
B.9 – Novell File Server Return to Production Procedures Checklist
B.10 – ASSIST Desktop Workstation Return to Production Procedures Checklist
B.11 – Network Communications Return to Production Procedures Checklist

B.1 – DAMAGE ASSESSMENT CHECKLIST

	Action	Status	Comments
1	Identify what caused the outage and determine the extent of the damage to information technology resources using the *Preliminary Assessment Checklist* on the following page.		
2	Identify how long the problem has existed.		
3	Summarize corrective measures already taken.		
4	Estimate the time required for recovery.		
5	Estimate the level of data processing that can be maintained using the alternate processing facility and its effect on: • Normal Daily operations • Delivery of services • Online Response time • Computing and communications capacity		
6	Prepare and submit recommendations for corrective action.		
7	Ensure that individuals with recovery team assignments identified in Section 2 of this plan are notified and accounted for. This includes: • Mainframe Data and Software Recovery Coordinator • Transportation and Recovery Materials Coordinator • Production Control and Operations Recovery Coordinator • Network Communications Recovery Coordinator • LAN Server/Workstation Recovery Coordinator • Support Personnel Coordinator		
8	Communicate status of the situation to the Local Administration Team.		

B.2 – PRELIMINARY ASSESSMENT CHECKLIST

Resource	Questions	Comments
Power	Is power off?	
	If so, for how long?	
	When will you regain power?	
	Are all power sources affected?	
	If not, which power sources are affected?	
	What will be the quality and reliability of power when it is regained?	
Hardware	Was the hardware shut down normally or was it a hard crash?	
	Which units, if any, are functioning?	
	How quickly can replacement units and/or parts be available?	
	Is a vendor/supplier involved?	
Software	Which software is affected?	
	How does the problem affect processing?	
	What corrective measures are being taken?	
Data	What data is lost and how easily can it be recovered?	
	How critical is the data?	
	What is the source of the data?	
Personnel	What is the current level of staffing relative to the needs of the emergency situation?	
	What is their physical and mental condition?	
	Are special arrangements needed?	
	Are special arrangements being planned?	

B.3 – DISASTER RECOVERY PLAN ACTIVATION CHECKLIST

	Action	Status	Comments
1	Identify an available location for use as a command center.		
2	Initiate contact of Technical Recovery Team personnel and inform them of the situation.		
3	Contact the alternate processing facility to inform staff there that a disaster has been declared. Determine alternate site availability and any scheduling or prioritization issues.		
4	Contact the DHR Local Disaster Recovery Plan's Local Administration Team Leader or the highest-ranking DHR official and provide information regarding the emergency situation, the steps that have been taken thus far.		

B.4 – MAINFRAME DATA & SOFTWARE RECOVERY PROCEDURES CHECKLIST

MAINFRAME DATA & SOFTWARE RECOVERY PROCEDURES CHECKLIST			
	Action	**Status**	**Comments**
1	Establish contact with Data Center Technical Support to ascertain if the following are available for use: • MVS OS • TSO/ROSCOE • DB2 Subsystem (DSNx) • DB2 Connect • SMS/3490E Tape Drives • RACF • COBOL for MVS • EOS-MVS • CA-7/CA-11		
2	Are off-site data backups and documentation available for use at the alternate processing facility		
3	Identify the required tape cartridge(s) backup (latest version)		
4	Restore ASSIST MVS Data using the most current available DFDSS backups as described in Section 5 and Appendix E of this plan: • Restore the ASSIST JCL, VSAM (non-database) Program, and Sequential files (Both Object and Cobol source should be restored) • Restore and start the ASSIST DB2 table spaces.		
5	Rebuild the ASSIST database indexes.		
6	Contact the Network Communications Recovery		

	Coordinator and verify connectivity to the database.		

MAINFRAME DATA & SOFTWARE RECOVERY PROCEDURES CHECKLIST (Cont.)			
	Action	**Status**	**Comments**
7	Recompile programs if LOADLIB members restored from backup are not sufficient. See Appendix D for list of required programs.		
8	If last backup was before nightly processing, then repeat nightly processing jobs. If last backup was after nightly processing, then repeat on-line activity, if necessary.		
9	ASSIST regular processing is performed normally through the CA-7 scheduler. All JCL to run the processing cycles is available in PS.CA7.JCLLIB. If CA-7 is unavailable then manual submission is required. See Appendix F for nightly processing flow diagrams, job descriptions, and CA-7 job scheduling specifications.		
10	Communicate availability and status of data recovery to the ASSIST Technical Recovery Team Coordinator.		

B.5 – NOVELL FILE SERVER RECOVERY PROCEDURES CHECKLIST

NOVELL FILE SERVER RECOVERY PROCEDURES CHECKLIST			
	Action	**Status**	**Comments**
1	Establish contact with the DHR Equipment Team		
2	Acquire file server equipment according to ASSIST hardware specifications as documented in Appendix A.3.		
3	Complete the physical configuration for file server machines and LAN/WAN		
4	Install NetWare Operating system using installation materials available. Ensure that NetWare licenses are unique to the server being restored, as duplicate licenses can cause unpredictable results.		
5	Install Backup Exec software using installation materials available.		
6	Ensure that the ASSIST Client software has been successfully restored and/or installed on the file server.		
7	Restore all server data from the most current available backups.		
8	Verify that the ASSIST Client software distribution program and/or process are operational. (This step must be completed to ensure successful ASSIST desktop workstation recovery.)		
9	Communicate availability and status of Server recovery to the ASSIST Technical Recovery Team Coordinator.		

B.6 – ASSIST DESKTOP WORKSTATION RECOVERY PROCEDURES CHECKLIST

ASSIST DESKTOP WORKSTATION RECOVERY PROCEDURES CHECKLIST			
	Action	**Status**	**Comments**
1	Establish contact with the DHR Equipment Team		
2	Acquire desktop workstation equipment according to ASSIST hardware specifications as documented in Appendix A.1 and Appendix A.2		
3	Complete the physical configuration of desktop workstations being restored		
4	Install workstation Operating System		
5	Complete the software configuration of desktop workstations being restored as documented in Appendix G		
6	Establish workstation communication to mainframe		
7	Verify that the ASSIST software distribution process is functional and that the ASSIST client software gets installed during initial server sign-on		
8	Communicate availability and status of workstation recovery to the ASSIST Technical Recovery Team Coordinator		

B.7 – NETWORK COMMUNICATIONS RECOVERY PROCEDURES CHECKLIST

NETWORK COMMUNICATIONS RECOVERY PROCEDURES CHECKLIST			
	Action	**Status**	**Comments**
1	Establish contact with the DHR Equipment Team		
2	Acquire DB2 Connect servers according to specifications in Appendix A.4.		
3	Physical configuration for Windows NT DB2 Connect servers.		
4	Install DB2 Connect Software and configure for ASSIST connectivity.		
5	Verify connectivity from the desktop via 3270 emulation software Attachmate EXTRA! For NetWare version 6.5.		
6	Verify connectivity from DB2 Connect to the alternate processing site		
7	Verify connectivity between the ASSIST workstations and the DB2 Connect servers		
8	Contact the Mainframe Software and Data Recovery Coordinator and establish connectivity to the database		
9	Communicate availability and status of network communications recovery to the ASSIST Technical Recovery Team Coordinator		

B.8 – MAINFRAME DATA & SOFTWARE RETURN TO PRODUCTION PROCEDURES CHECKLIST

MAINFRAME DATA & SOFTWARE RETURN TO PRODUCTION PROCEDURES CHECKLIST			
	Action	**Status**	**Comments**
1	Establish contact with Data Center Technical Support to ascertain if the following are available for use: • MVS OS • TSO/ROSCOE • DB2 Subsystem (DSNx) • DB2 Connect • SMS/3490E Tape Drives • RACF • COBOL for MVS • EOS-MVS • CA-7/CA-11		
2	Are off-site data backups and documentation available for use at the alternate processing facility		
3	Identify the required tape cartridge(s) backup (latest version)		
4	Restore ASSIST MVS Data using the most current available DFDSS backups as described in Section 5 and Appendix E of this plan: • Restore the ASSIST JCL, VSAM (non-database) Program, and Sequential files (Both Object and Cobol source should be restored) • Restore and start the ASSIST DB2 table spaces.		
5	Rebuild the ASSIST database indexes.		
6	Contact the Network		

	Communications Recovery Coordinator and verify connectivity to the database.		

MAINFRAME DATA & SOFTWARE RETURN TO PRODUCTION PROCEDURES CHECKLIST (Cont.)			
	Action	**Status**	**Comments**
7	Recompile programs if LOADLIB members restored from backup are not sufficient. See Appendix D for list of required programs.		
8	If last backup was before nightly processing, then repeat nightly processing jobs. If last backup was after nightly processing, then repeat on-line activity, if necessary.		
9	ASSIST regular processing is performed normally through the CA-7 scheduler. All JCL to run the processing cycles is available in PS.CA7.JCLLIB. If CA-7 is unavailable then manual submission is required. See Appendix F for nightly processing flow diagrams, job descriptions, and CA-7 job scheduling specifications.		
10	Communicate availability and status of data recovery to the ASSIST Technical Recovery Team Coordinator.		

B.9 – NOVELL FILE SERVER RETURN TO PRODUCTION PROCEDURES CHECKLIST

NOVELL FILE SERVER RETURN TO PRODUCTION PROCEDURES CHECKLIST			
	Action	**Status**	**Comments**
1	Establish contact with the DHR Equipment Team		
2	Acquire file server equipment according to ASSIST hardware specifications as documented in Appendix A.3.		
3	Complete the physical configuration for file server machines and LAN/WAN		
4	Install NetWare Operating system using installation materials available. Ensure that NetWare licenses are unique to the server being restored, as duplicate licenses can cause unpredictable results.		
5	Install Backup Exec software using installation materials available.		
6	Ensure that the ASSIST Client software has been successfully restored and/or installed on the file server.		
7	Restore all server data from the most current available backups.		
8	Verify that the ASSIST Client software distribution program and/or process are operational. (This step must be completed to ensure successful ASSIST desktop workstation recovery.)		
9	Communicate availability and status of Server recovery to the ASSIST Technical Recovery Team Coordinator.		

B.10 – ASSIST DESKTOP WORKSTATION RETURN TO PRODUCTION PROCEDURES CHECKLIST

ASSIST DESKTOP WORKSTATION RETURN TO PRODUCTION PROCEDURES CHECKLIST			
	Action	**Status**	**Comments**
1	Establish contact with the DHR Equipment Team		
2	Acquire desktop workstation equipment according to ASSIST hardware specifications as documented in Appendix A.1 and Appendix A.2		
3	Complete the physical configuration of desktop workstations being restored		
4	Install workstation Operating System		
5	Complete the software configuration of desktop workstations being restored as documented in Appendix G		
6	Establish workstation communication to mainframe		
7	Verify that the ASSIST software distribution process is functional and that the ASSIST client software gets installed during initial server sign-on		
8	Communicate availability and status of workstation recovery to the ASSIST Technical Recovery Team Coordinator		

B.11 – NETWORK COMMUNICATIONS RETURN TO PRODUCTION PROCEDURES CHECKLIST

NETWORK COMMUNICATIONS RETURN TO PRODUCTION PROCEDURES CHECKLIST			
	Action	**Status**	**Comments**
1	Establish contact with the DHR Equipment Team		
2	Acquire DB2 Connect servers according to specifications in Appendix A.4.		
3	Physical configuration for Windows NT DB2 Connect servers.		
4	Install DB2 Connect Software and configure for ASSIST connectivity.		
5	Verify connectivity from the desktop via 3270 emulation software Attachmate EXTRA! For NetWare version 6.5.		
6	Verify connectivity from DB2 Connect to the alternate processing site		
7	Verify connectivity between the ASSIST workstations and the DB2 Connect servers		
8	Contact the Mainframe Software and Data Recovery Coordinator and establish connectivity to the database		
9	Communicate availability and status of network communications recovery to the ASSIST Technical Recovery Team Coordinator		

APPENDIX C – RESTORATION OF SERVICES MEETING AGENDA

MEETING AGENDA

Subject: Restoration of ASSIST Data Processing to Primary Processing Facility

Meeting Date:

Attendees:

Items for Discussion:

- Determine current processing points and status of data files
- Technical team coordinators' reports
- Lessons learned during restoration to the alternate processing site
- Errors and/or problems encountered during disaster recovery to be avoided during restoration to the primary site
- Report on how successful processing has been at the alternate site
- Draft schedules for accommodating the move back to the primary site
- Review ASSIST Technical Recovery Team assignments
- Review the off-site storage inventories to verify required resources are available

Additional Discussion:

APPENDIX D – REQUIRED MAINFRAME BATCH PROGRAMS

Program Name	Description
PSASB202	SM06A-Sum Data Form NCCAND
PSASB203	Adult Pending STWD Summary
PSASB204	Out of Home Care Report Adult and Child
PSASB205	Timely Child/Victim CONT Report
PSASB206	Report of Child deaths
PSASB207	Summary of Child Deaths
PSASB208	Child Reports Suspended Status
PSASB209	Repeat Maltreat Report Child
PSASB210	Quality Assurance Indicators
PSASB213	Pending Reports (Child)
PSASB214	Quality Assurance – Reports Received
PSASB215	Quality Assurance – Reports Pending
PSASB216	Quality Assurance – Reports Disposed
PSASB217	Adult Protective Service Investigation
PSASB218	Child Abuse/Neglect Central Registry
PSASB219	Information and Referral
PSASB220	Reports Received Summary
PSASB221	Worker Activity Summary
PSASB222	Adult Worker Summary
PSASB223	Adult Reports Received
PSASB224	Uninvestigated PS-Report
PSASB225	AN/E Central Registry
PSASB226	CAN Reports by Zip Code
PSASB227	QA Timeliness of Response
PSASB228	Timeliness of Response
PSASB229	Worker Prevention Detail and Summary
PSASB230	QA IND – Prevention Received
PSASB231	QA IND – Prevention Pending
PSASB232	QA IND – Prevention Completed
PSASB233	Cumulative Monthly Count
PSASB234	Prevention Timely Child Contact
PSASB235	Prevention RC Indicators
PSASB404	ELEC. Report DIST. Load – Insert

APPENDIX E – DISASTER RECOVERY RESTORATION JOBS

The following table indicates the jobs and the order in which they should run in order to restore all ASSIST non-database files, database files and indexes. All jobs referenced for restoration are located in the system PDS library PS.DB2.PROD.RCVR.ASMEMLIB.

If restoring from imagecopies, coordinate DB2 imagecopy restore with Mainframe Data & Software Recovery Coordinator (DB2 catalog restore required before data restore). If restoring from sequential files, DB2 catalogs are not required.

This assumes that the necessary system requirements have been meet at the recovery site. These assumptions included but are not limited to the following: DB2 is running with the catalog restored, all necessary PDS libraries are available for use and adequate DASD space is available. Note: when the DB2 catalog is recovered it will recover the Stored Procedures and Triggers associated with this database.

Job Name	Description
CRSGASPR	Creates the ASSIST production group
CRDBASPR	Creates the ASSIST production database
CRTPALL	Creates the Non-Reference ASSIST production tablespaces and the associated tables
CRTPREF	Creates the Reference ASSIST production tablespaces and the associated tables
CRIPALL	Creates the Non-reference ASSIST production indexes for the associated tables
CRIPREF	Creates the Reference ASSIST production indexes for the associated tables
RCVASP01	Data restore
RCVASP02	Data restore
RCVASP03	Data restore
RCVASP04	Data restore
RCVASP05	Data restore
RCVASP06	Data restore
RCVASP07	Data restore
RCVASP08	Data restore
RCVASP09	Data restore
RCVASP10	Data restore
RCVASP11	Data restore
RCVASP12	Data restore
RCVASP13	Data restore
RCVASP14	Data restore
RCVASP15	Data restore
RCVRASPR	Recovery utility job for all ASSIST production tablespaces related to both reference and non-reference tables
RBLDASPR	The rebuild utility job for all the ASSIST production indexes related to both reference and non-reference tables
CRFKPALL	Creates ASSIST production foreign keys

CRCCPALL	Creates ASSIST production check constraints

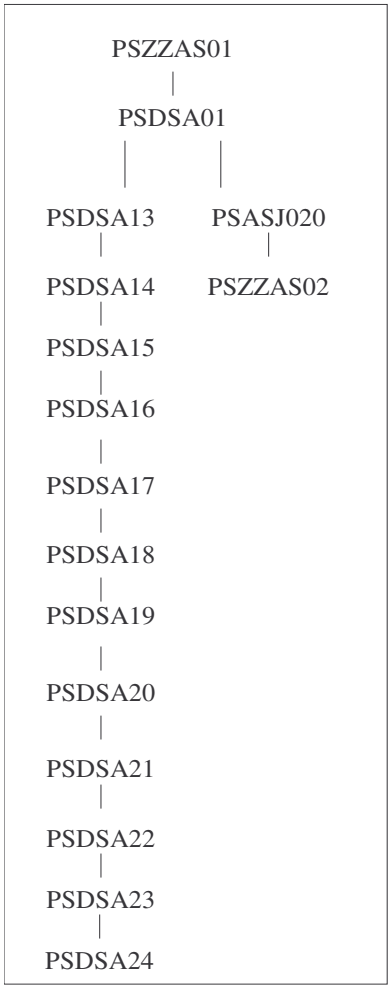
APPENDIX F – ASSIST PROCESSING FLOW DIAGRAMS, JOB DESCRIPTIONS, & CA-7 JOB SCHEDULING SPECIFICATIONS

This appendix shows the following processing cycles and jobs descriptions for each cycle:

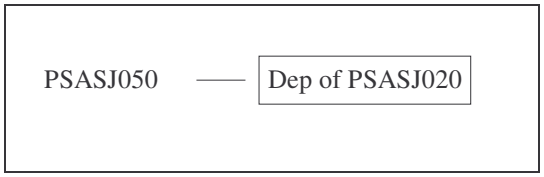
- Daily
- Weekly
- Monthly
- Quarterly
- Annual
- On-Request

F.1 – ASSIST PROCESSING CYCLES

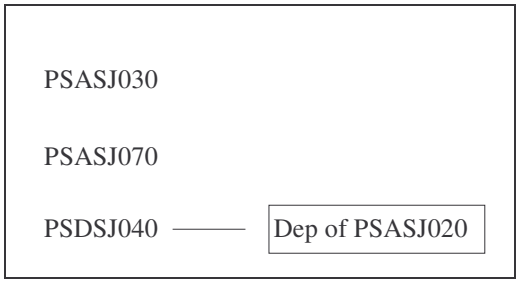
F.1.1 – ASSIST DAILY PROCESSING CYCLE



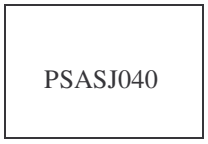
F.1.2 – ASSIST WEEKLY PROCESSING CYCLE



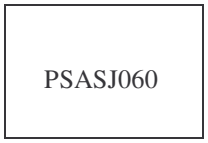
F.1.3 – ASSIST MONTHLY PROCESSING CYCLE



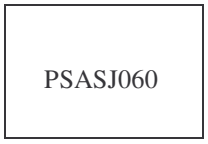
F.1.4 – ASSIST QUARTERLY PROCESSING CYCLE



F.1.5 – ASSIST ANNUAL PROCESSING CYCLE



F.1.6 – ASSIST ON-REQUEST PROCESSING CYCLE



F.2 – ASSIST JOBS INVENTORY

JCL jobstreams for all ASSIST jobs can be found in the following datasets:

- PS.CA7.JCLLIB (productions jobs)
- PS.DS.JCLLIB (staging area; jobs are moved from here to PS.CA7.JCLLIB at check in)
- PS.AS.TEST.JCLLIB (used for development and testing)

F.2.1 – ASSIST DAILY JOBS

Job Name	Description
PSDSJA01	ASSIST IBM imagecopy to disk – all tables
PSDSJA13	ASSIST IDCAMS copy of the IBM disk imagecopy to cart - AARA, AARQ, ACAS, ACRA, ADCL, ACUP, ADDR, AFRA, AHLP
PSDSJA14	ASSIST IDCAMS copy of the IBM disk imagecopy to cart – AIVA, ANPI, APLV, APSR, ARAD, ARAP, ARAQ, ARAS, ARDC, AUAD, AUFD, AUID, AUIS, AUPS, AUTB, CCAD, CCAP, CCAR, CCAT, CCDC, CCMP, CCOL, CCPA, CCPH, CCPP, CCPR, CCRC, CHKI, CHKT, CHLS, CITM, CNCT
PSDSJA15	ASSIST IDCAMS copy of the IBM disk imagecopy to cart – CSPT, CSTF, CVXF, ERLG, FRAD, FRAP, FRAQ, FRAS, FRAU, FRDC, IAIN, IAKA, IALG, IALR, IASS, ICAD, ICOL, ICPH, IDOC, INAD, INPI, INRF, INTK, INTP
PSDSJA16	ASSIST IDCAMS copy of the IBM disk imagecopy to cart – INVS, IPRA, IPRC, IPRP, IPRR, IPRS, IPRV, IPSR, IPVA, IPVB, IPVN, IPVP, IPVR, IRAT, IVAD, IVAG, IVAI, IVAP, IVCT, IVDC, IVIN, IVPR, IVPT, JBCL, LOCA, MARI, MSGS, NDST, NEED, NPSI, NPSS, NXNM, ONRW, ONTR, OTLD, OTLR, PAND, PANE, PANP, PNCT
PSDSJA17	ASSIST IDCAMS copy of the IBM disk imagecopy to cart – PRAD, PRAK, PRGN, PRPH, PRRC, PRRM, PRSN
PSDSJA18	ASSIST IDCAMS copy of the IBM disk imagecopy to cart – PRSR, PRSS, PSNR, PSRI, PSRR, PSRT, PWHS, RAND, RANH, RARF, RCCR, RCDT, RCLS, RCSD, RCST, RCTR, RCTY, RCYT, RDAR, RFIP, RFRF, RFRR, RHLD, RINA, RINT, RIPR, RISR, RIVA, RLGA, RNDC, RNPF, RNPS, ROFC, RPAC, RPAL, RPAR, RPFR, RPIV, RPNP, RPNS, RPPR
PSDSJA19	ASSIST IDCAMS copy of the IBM disk imagecopy to cart – RPPS, RPRD, RPRT, RPSC, RPSN, RPSR, RPST< RPTD, RPTS< RPTU, RPUS, RRAC, RRPT, RRSA, RRSG
PSDSJA20	ASSIST IDCAMS copy of the IBM disk imagecopy to cart – RRTR, RTTL, RWKC, RWKP,SCRN, SECA, SECG, SECI, SECT, SECU, SGPR, SGRP, STRG, TICK, TKCT, TKES, WRCT, WRDG, WRGP, WRIC, WRIT, WRKD, WRKR, WRLN, WRTN, WRVH, ZIPC, ACND
PSDSJA21	ASSIST IDCAMS copy of the IBM disk imagecopy to cart – AUIA, AUAI, AUPA, RCAF, RCAR, RIAF, RIAR, RINR, RITY, RMTH
PSDSJA22	ASSIST IDCAMS copy of the IBM disk imagecopy to cart – CSPS, CSAN, CSCL, CSOC, CSPN, RPHS, RRCT, CNEV, CNPR, CRAQ, CRAS, CRAU, CSAL, AIVD

PSDSJA23	ASSIST IDCAMS copy of the IBM disk imagecopy to cart – CNDC
PSDAJA24	ASSIST IDCAMS copy of the IBM disk imagecopy to cart – RIAT, RIVT
PSASJ020	M-F for previous business day. PSASB205, PSASB234

F.2.2 – ASSIST WEEKLY JOBS

Job Name	Description
PSASJ050	Runs on Friday. PSASB224 – Delete/Update

F.2.3 – ASSIST MONTHLY JOBS

Job Name	Description
PSASJ030	Runs on 5th day of month. PSASB202 – PSASB204, PSASB206 – PSASB209, PSASB213 – PSASB217, PSASB219 – PSASB223, PSASB226 – PSASB235 – Read only except for inserts for ERD, not affected by users.
PSASJ070	Runs on 10th day of month. PSASB218, PSASB225 – Read only except for inserts for ERD, not affected by users
PSDSJA40	Runs on the 16th workday of month.

F.2.4 – ASSIST QUARTERLY JOBS

Job Name	Description
PSASJ040	Runs on the 5th day of month following end of quarter. PSASB207, PSASB210 – Read only except for inserts for ERD, not affected by users.

F.2.5 – ASSIST ANNUAL JOBS

Job Name	Description
PSASJ060	Annual On Request. PSASB202, PSASB217 – Read only except for inserts for ERD, not affected by users.

F.2.6 – ASSIST ON-REQUEST JOBS

Job Name	Description
PSASJ060	Annual On Request. PSASB202, PSASB217 – Read only except for inserts for ERD, not affected by users

F.3 – ASSIST CA-7 JOB SCHEDULING INFORMATION

Job Name	Triggered By	Schedule ID	Submit Time	Waiting on Jobs/Lead Time	Schedule ID	Jobs Triggered	Schedule ID
PSZZAS01	Runs Monday – Friday	002	2:30		002	PSDSJA01	002
PSDSJA01	Runs Monday – Friday	002 003-012 ALL		PSZZAS01	002 003-012 ALL	PSASJ020 PSDSJA02-11 PSDSJ013	002 003-012 ALL
PSDSJA13	Runs Monday – Friday	ALL		PSDSJA13	ALL	PSDSJA14	ALL
PSDSJA14	Runs Monday – Friday	ALL		PSDSJA14	ALL	PSDSJA15	ALL
PSDSJA15	Runs Monday – Friday	ALL		PSDSJA15	ALL	PSDSJA16	ALL
PSDSJA16	Runs Monday – Friday	ALL		PSDSJA16	ALL	PSDSJA17	ALL
PSDSJA17	Runs Monday – Friday	ALL		PSDSJA17	ALL	PSDSJA18	ALL
PSDSJA18	Runs Monday – Friday	ALL		PSDSJA18	ALL	PSDSJA19	ALL
PSDSJA19	Runs Monday – Friday	ALL		PSDSJA19	ALL	PSDSJ020	ALL
PSDSJA20	Runs Monday – Friday	ALL		PSDSJA20	ALL	PSDSJ021	ALL
PSDSJA21	Runs Monday – Friday	ALL		PSDSJA21	ALL	PSDSJ022	ALL
PSDSJA22	Runs Monday – Friday	ALL		PSDSJA22	ALL	PSDSJ023	ALL
PSDSJA23	Runs Monday – Friday	ALL		PSDSJA23	ALL	PSDSJ024	ALL
PSDSJA24	Runs Monday – Friday	ALL					
PSDSJA03	Runs Monday – Friday	003		PSDSJA01	003	PSASJ020	003
PSDSJA04	Runs Monday – Friday	004		PSDSJA01	004	PSASJ020	004
PSDSJA05	Runs Monday – Friday	005		PSDSJA01	005	PSASJ020	005
PSDSJA06	Runs Monday – Friday	006		PSDSJA01	006	PSASJ020	006
PSDSJA07	Runs Monday – Friday	007		PSDSJA01	007	PSASJ020	007
PSDSJA08	Runs Monday – Friday	008		PSDSJA01	008	PSASJ020	008
PSDSJA09	Runs Monday – Friday	009		PSDSJA01	009	PSASJ020	009
PSDSJA10	Runs Monday – Friday	010		PSDSJA01	010	PSASJ020	010
PSDSJA11	Runs Monday – Friday	011		PSDSJA01	011	PSASJ020	011
PSDSJA02	Runs Monday – Friday	012		PSDSJA01	012	PSDSJA01	0012
PSASJ020	Runs Monday – Friday		Early next am	PSDSJA01 – 11	02-12	PSZZAS02	02-12
PSZZAS02	Runs Monday – Friday	ALL				PSASJ020	
PSASJ050	Runs on Friday (Sat am)	003 CAL	Early Sat am	PSDSJ020			
PSASJ030	Runs on 5th day of month	003 CAL	Early next am	PSZZAS02			
PSASJ040	Runs on 5th day of month (quarterly)	003 CAL	Early next am	PSZZAS02			
PSASJ070	Runs on 10th day of month (monthly)	003 CAL	Early next am	PSZZAS02			
PSDSJA40	Runs on 16th WD	004 CAL		PSASJ020			
PSASJ060	Annual on Request	175					

PSASJ* - ASSIST jobs PSDSJA* - Database backup jobs. PSZZA* - CA7 job

APPENDIX G – ASSIST DESKTOP IMAGES

G.1 – ASSIST USER DESKTOP SOFTWARE IMAGE

- Windows95
- Office97
- I.E. 5.5
- Extra 6.7

G.2 – ASSIST DEVELOPER DESKTOP SOFTWARE IMAGE

- Windows NT 4.0
- Windows NT Service Pack 6
- Sybase Enterprise Application Studio 4.0
- MDAC 2.7
- Office97
- Extra 6.5/6.7
- Command Antivirus
- Adobe Acrobat 5.0 or latest

The following is a list of additional software that is loaded in addition to the above image depending on the type of developer.

- Internet Explorer 5.5/Developer Version
- DreamWeaver MX
- Fireworks MX
- IBM DB2 Connect 7.2/Updates
- SnagIT
- Visual C++
- MacroMedia Flash MX
- MS Project 98
- Visio Standard 5.0
- PowerDesigner 9 Personal Edition
- PowerDesigner 9 Enterprise Edition
- Diskeeper 7.0
- EAServer 4.2.2 developer or latest

APPENDIX H – ASSIST DISASTER RECOVERY PLAN CHANGE APPROVAL FORM

Author:	**Phone Number:**
Date:	**Version:**
Description of change(s):	

After Reviewing, Please Sign if You Approve of the Requested Changes **Route for Approval:**	
ASSIST Technical Recovery Team Coordinator (Cheri Martin)	
Mainframe Data and Software Recovery Coordinator (Gina Lee)	
Infrastructure Recovery Coordinator (Ben Nichols)	
Production Control and Operations Recovery Coordinator (Terry Brown)	
Network Communications Recovery Coordinator (Ben Nichols)	
LAN Server/ Workstation Recovery Coordinator (Ben Nichols)	
Transportation & Recovery Materials Coordinator (Ben Nichols)	

APPENDIX I – ASSIST DISASTER RECOVERY EXERCISE GUIDE

The most effective way to validate the adequacy of a Disaster Recovery Plan and promote awareness among personnel with Recovery Team responsibilities is through periodic recovery exercises. This section of the Disaster Recovery Plan contains checklists and sample forms for the design, scheduling, and coordination of ASSIST Disaster Recovery Plan tests.

I.1 – DISASTER RECOVERY EXERCISE COORDINATION

The coordination of periodic Disaster Recovery Plan exercises is the responsibility of the ASSIST Technical Recovery Team Coordinator or their assignee. Recovery exercise coordination consists of the following responsibilities:

- Scheduling and coordination of annual recovery exercises
- Documentation of the disaster scenario designed for the exercise
- Coordination of all pertinent information to the personnel involved in the test
- Issue and action item tracking and reporting for the duration of the exercise
- Presentation of recovery exercise results
- Coordination of Disaster Recovery Plan updates proposed for resolution of issues noted during the recovery test

I.2 – SAMPLE RECOVERY EXERCISE KICKOFF MEETING AGENDA

MEETING AGENDA

Subject: Annual ASSIST Disaster Recovery Test

Meeting date:

Attendees:

Items for Discussion:

- Recovery test schedule and duration (including dates and times)

- Recovery test locations

- Recovery test scenario description
    1) This year's annual disaster recovery test is designed to exercise the plan and test readiness of the personnel responsible for recovery from a data center disaster
    2) The following conditions will be in effect at the start of the exercise:
        a) The Folsom administration building has been severely damaged by fire
        b) The first and second floors of the building have been gutted and 90% of the computer equipment has been destroyed
        c) The phone systems in Montgomery are working
        d) The Alabama Wide Area Network is down due to the loss of communications equipment located in Data Center 1
        e) None of the 67 DHR county sites have been damaged
        f) There were 2 casualties within the DHR Center for Information Services

- Expectations for the test. Desired results include the following:
    1) Simulate recovery
    2) Plan updates
    3) Training experience
    4) Disaster awareness

- Review of ASSIST Technical Recovery Team assignments

- Draft schedules for accommodating the restoration activities at the alternate site

- Review the off-site storage inventories to verify required resources are available

Additional Discussion:

I.3 – SAMPLE RECOVERY EXERCISE SCHEDULE TEMPLATE

MEMORANDUM

To: Recovery Team Coordinators
Finance/ISD

From: ASSIST Disaster Recovery Test Coordinator

Date:

Subject: ASSIST Disaster Recovery Test Schedule / Attendees

Attached is a list of attendees and a test schedule for this year's ASSIST disaster recovery test at (*location of test*)

Name	Arrival Date/Time	Functional Responsibility
		ASSIST Technical Recovery Team Coordinator
		Mainframe Data and Software Recovery Coordinator
		Transportation and Recovery Materials Coordinator
		Production Control and Operations Recovery Coordinator
		Infrastructure Recovery Coordinator
		Network Communications Recovery Coordinator
		LAN Server/ Workstation Recovery Coordinator

I.4 – DISASTER RECOVERY EXERCISE SCHEDULE

Date	Time	Activity	Location	Responsible
		ASSIST Software and Database Restoration Procedures		
		Novell File Server Recovery		
		ASSIST Desktop Workstation Recovery		
		Network Communications Recovery		

I.5 – SAMPLE DISASTER RECOVERY EXERCISE TRAVEL ARRANGEMENTS TEMPLATE

MEMORANDUM

TO: Disaster Recovery Test Attendees

FROM:

DATE:

SUBJECT: Disaster Recovery Test Travel Schedule Information

Hotel reservations have been made for the following individuals at the _____ Hotel (phone number). These reservations were made guaranteed late arrival to State of Alabama at the government rate of $__ per night.

HOTEL RESERVATION/CONFIRMATION NUMBERS

Name	Check-In	Check-Out	Confirmation #

FLIGHT SCHEDULE INFORMATION

DISASTER RECOVERY TEST DESTINATION

To: _____ (Destination)

Name	Date	Leave	Arrive	Airline	Flight #	Confirmation #	Car Rental

To:_____(Return Trip)

Name	Date	Leave	Arrive	Airline	Flight #	Confirmation #

I.6 – SAMPLE MEETING AGENDA/ISSUE TRACKING TEMPLATE FOR POST EXAMINATION

MEETING AGENDA

Subject: Disaster Recovery Test Post Examination Meeting

Meeting Date:

Attendees:

Items for Discussion:

- Review of Previous Meeting Notes

The List below is a follow up from the 200x Disaster Recovery Test Post Examination meeting provided as reference for enhancements that made this year's test go so smoothly.

Issue	Action	Status	Assignment

Review of Issues and Action Items from this test.

Issue	Action	Status	Assignment

Other Business

- Disaster Recovery Plan updates are due by *MM/DD/YY*

- Disaster Recovery Plan enhancements. Any comments on how things went or suggestions for ways of improving current procedures and documentation?
    a) Mainframe software and data recovery
    b) Infrastructure recovery
    c) LAN Server and workstation recovery
    d) Production control recovery
    e) Network communications recovery

Attachments